INSTALLATION INSTRUCTIONS FOR SELF-CONTAINED PACKAGE AIR CONDITIONERS AND HEAT PUMP UNITS

ATTENTION INSTALLATION PERSONNEL

Prior to installation, thoroughly familiarize yourself with this installation manual. Observe all safety warnings. During installation or repair, caution is to be observed.
It is your responsibility to install the product safely and to educate the customer on its safe use.

These installation instructions cover the outdoor installation of self-contained package air conditioner and heating units. See the Specification Sheets applicable to your model for information regarding accessories.

NOTE: Please contact your distributor or our website for the applicable Specification Sheets referred to in this manual.

Placeholder for Bar Code

Whirlpool® Models WPH43*H, WPH44***H, WPC43***H, WPC44***H**

WPIO-352B

Tradewinds Distributing Company, LLC
14610 Breakers Drive
Jacksonville, FL 32258

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SAFETY INSTRUCTIONS

The following symbols and labels are used throughout this manual to indicate immediate or potential safety hazards. It is the owner's and installer's responsibility to read and comply with all safety information and instructions accompanying these symbols. Failure to heed safety information increases the risk of personal injury, property damage and/or product damage.

Recognize this symbol as a safety precaution.

⚠ WARNING

Hazards or unsafe practices could result in property damage, product damage, severe personal injury or death.

⚠ CAUTION

Hazards or unsafe practices may result in property damage, product damage, personal injury or death.

⚠ WARNING

Do not connect to or use any device that is not design-certified for use with this unit. Serious property damage, personal injury, reduced unit performance and/or hazardous conditions may result from the use of such non-approved devices.

⚠ WARNING

HIGH VOLTAGE!

Disconnect ALL power before servicing.

Multiple power sources may be present.

Failure to do so may cause property damage, personal injury or death.

⚠ WARNING

Connecting unit ductwork to unauthorized heat producing devices such as a fireplace insert, stove, etc., may result in property damage, fire, carbon monoxide poisoning, explosion, personal injury or death.

⚠ WARNING

This product contains or produces a chemical or chemicals which may cause serious illness or death and which are known to the State of California to cause cancer, birth defects or other reproductive harm.

⚠ WARNING

To avoid property damage, personal injury or death, do not use this furnace if any part of the furnace has been under water. Immediately call a qualified service technician to inspect the furnace and to replace any part of the control system and any gas control having been under water.

⚠ WARNING

This unit must not be used as a "construction heater" during the finishing phases of construction on a new structure. This type of use may result in premature failure of the unit due to extremely low return air temperatures and exposure to corrosive or very dirty atmospheres.

⚠ WARNING

To prevent the risk of property damage, personal injury, or death, do not store combustible materials or use gasoline or other flammable liquids or vapors in the vicinity of this unit.

⚠ WARNING

Installation and repair of this unit should be performed ONLY by individuals meeting the requirements of an "Entry Level Technician," at a minimum, as specified by the Air-Conditioning, Heating and Refrigeration Institute (AHRI). Attempting to install or repair this unit without such background may result in product damage, personal injury or death.

MESSAGE TO HOMEOWNER

These instructions are addressed primarily to the installer; however, useful maintenance information is included and should be kept after installation for future reference.

Before using this manual, check the serial plate for proper model identification.

The installation and servicing of this equipment must be performed by qualified, experienced technicians only.

TO THE INSTALLER

Carefully read all instructions for the installation prior to installing unit. Make sure each step or procedure is understood and any special considerations are taken into account before starting installation. Assemble all tools, hardware and supplies needed to complete the installation. Some items may need to be purchased locally.

After deciding where to install unit, closely look over the location—both the inside and outside of the home. Note any potential obstacles or problems that might be encountered as noted in this manual. Choose a more suitable location if necessary.

IMPORTANT NOTE TO THE OWNER REGARDING PRODUCT WARRANTY

Your warranty certificate is supplied as a separate document with the unit installed by your contractor. Read the limited warranty certificate carefully to determine what is and is not covered. Keep the warranty certificate in a safe place. If you are unable to locate the warranty certificate, please contact your installing contractor, or contact customer service at 1-866-944-7575 to obtain a copy.

To receive the 10-Year Parts Limited Warranty, online registration must be completed within 60 days of installation. Online registration is not required in California or Quebec.

Full warranty details and instructions are available at www.whirlpoolhvac.com.

To register your unit, go to www.whirlpoolhvac.com. Click on the manufacturer's Comfort Commitment™ Warranty link located at the bottom center of the home page. Next, click on the Click Here to Register Your Product link located at the top center of the page, and complete the forms in the manner indicated.

SHIPPING INSPECTION

Upon receiving the unit, inspect it for damage from shipment. Claims for damage, either shipping or concealed, should be filed immediately with the shipping company. Check the unit model number, specifications, electrical characteristics and accessories to determine if they are correct. In the event an incorrect unit is shipped, it must be returned to the supplier and must not be installed. The manufacturer assumes no responsibility for installation of incorrectly shipped units.

REPLACEMENT PARTS

When reporting shortages or damages, or ordering repair parts, give the complete product model and serial numbers as stamped on the unit's nameplate. Replacement parts for this product are available through your contractor or local distributor. For the location of your nearest distributor, consult the white business pages, the yellow page section of the local telephone book or contact:

Tradewinds Distributing Company, LLC
14610 Breakers Drive
Jacksonville, Florida 32258
1-866-944-7575

CODES AND REGULATIONS

The WPC/WPH AH-series air conditioners and heat pumps are designed for outdoor use only. This series is available in cooling capacities of 2, 2½, 3, 3½, 4 and 5 nominal tons of cooling. Optional field-installed heat kits are available in 5, 8, 10, 15 and 20 kW. The units can be easily installed in manufactured or modular homes with existing high-static ductwork. The units can also be easily converted to accommodate a plenum for normal or low-static applications.

The WPC/WPH AH-series are self-contained packaged units so the only connections needed for installation are the supply and return ducts, the line and low voltage wiring and drain connection. The units are ETL listed and AHRI certified.

The information on the rating plate is in compliance with the FTC and DOE rating for single-phase units. The 3-phase units in this series are not covered under the DOE certified program. The efficiency ratings of these units are a product of thermal efficiency determined under continuous operating conditions independent of any installed system.

EPA Regulations

IMPORTANT: The United States environmental protection agency (EPA) has issued various regulations regarding the introduction and disposal of refrigerants in this unit. Failure to follow these regulations may harm the environment and can lead to the imposition of substantial fines. Because regulations may vary due to passage of new laws, we suggest a certified technician perform any work done on this unit. Should you have any questions, please contact the local office of the EPA.

National Codes

This product is designed and manufactured to permit installation in accordance with National Codes. It is the installer's responsibility to install the product in accordance with National Codes and/or prevailing local codes and regulations.

MAJOR COMPONENTS

The unit includes a hermetically sealed refrigerating system (consisting of a compressor, condenser coil, evaporator coil with flowrator), an indoor blower, a condenser fan and all necessary internal electrical wiring. The heat pump also includes a reversing valve, solenoid, defrost thermostat and control and loss of charge protection. The system is factory-evacuated, charged and performance tested. Refrigerant amount and type are indicated on rating plate.

PREINSTALLATION CHECKS

Before attempting any installation, the following points should be considered:

- Structural strength of supporting members
- Clearances and provision for servicing
- Power supply and wiring
- Air duct connections
- Drain facilities and connections
- Location may be on any 4 sides of a home, manufactured or modular, to minimize noise.

CLEARANCES AND ACCESSIBILITY

The unit is designed to be located outside the building with unobstructed condenser air inlet and discharge. Additionally, the unit must be situated to permit access for service and installation. Condenser air enters from 3 sides. Air discharges upward from the top of the unit. Refrigerant gauge connections are made on the right side of the unit as you face the compressor compartment. Electrical connections can be made either on the right, bottom or duct panel side of the unit. The best and most common application is for the unit to be located 10" (25.4 cm) from the wall (4" [10.2 cm] minimum) with the connection side facing the wall. Close to the wall application minimizes exposed wiring.

Close to the wall application assures free, unobstructed air to the other 2 sides. In more confined application spaces, such as corners, provide a minimum 10" (25.4 cm) clearance on all air inlet sides. Allow 18" (45.7 cm) minimum for service access to the compressor compartment and controls. The top of the unit should be completely unobstructed. If units are to be located under an overhang, there should be a minimum of 36" (91.4 cm) clearance and provisions made to deflect the warm discharge air out from the overhang.

Unit Location

Consider the affect of outdoor fan noise on conditioned space and any adjacent occupied space. It is recommended that the unit be placed so that the condenser air discharge does not blow toward windows less than 25 ft (7.6 m) away. Consideration should also be given to shade and unit appearance.

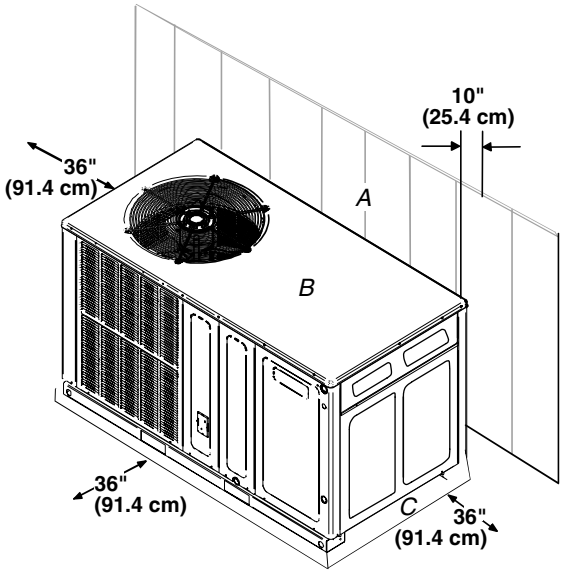
The unit should be set on a solid, level foundation—preferably a concrete slab at least 4" (10.2 cm) thick. The slab should be above ground level and surrounded by a graveled area for good drainage. Any slab used as a unit's foundation should not adjoin the building as it is possible that sound and vibration may be transmitted to the structure. For rooftop installation, steel or treated wood beams should be used as unit support for load distribution.

Heat pumps require special location consideration in areas of heavy snow accumulation and/or areas with prolonged continuous subfreezing temperatures. Heat pump unit bases have holes under the outdoor coil to permit drainage of defrost water accumulation. The unit must be situated to permit free unobstructed drainage of the defrost water and ice. A minimum 2" (5 cm) clearance under the outdoor coil is required in milder climates.

Ground Level Installations—Outside Slab

- The unit must be mounted on a solid, level foundation.
- Select a location that will minimize the length of the supply and return ducts.
- Select a location where external water drainage cannot collect around the unit.
- Consideration should also be given to shade, appearance and noise.

Ground Level Installation

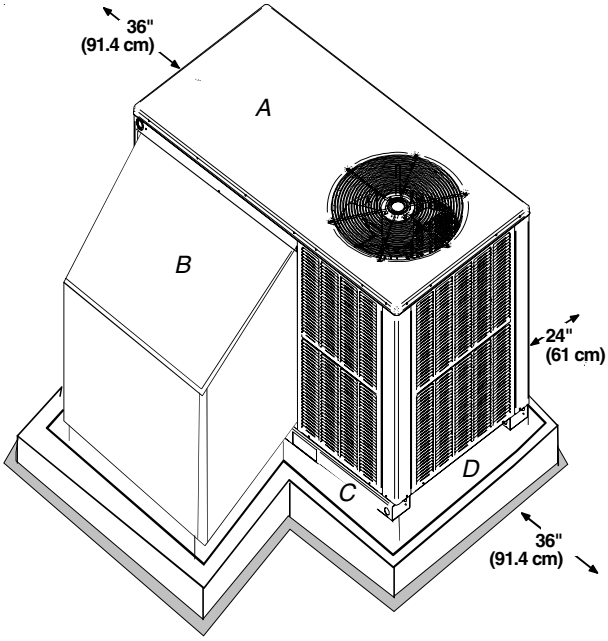


A. Wall
B. Unit
C. Curb

Rooftop Installations

- Before locating the unit on the roof, check that the roof has sufficient structural strength to carry the weight of the unit(s) and snow or water loads as required by local codes. See specification sheet for weight of units. This is very important and the installer's responsibility.
- Make proper consideration for the weather-tight integrity of the roof and proper drainage of condensate.
- To ensure proper condensate drainage, the unit must be installed in a level position.
- Consideration should also be given to shade, appearance and noise.

Rooftop Installation



A. Unit *C. Platform*
B. Plenum *D. Curb*

- The unit may be installed directly on wood floors or on Class A, Class B, or Class C roof covering material.
- To avoid possible personal injury, a safe, flat surface for service personnel should be provided.

DUCTING

⚠ WARNING

Connecting unit ductwork to unauthorized heat producing devices such as a fireplace insert, stove, etc., may result in property damage, fire, carbon monoxide poisoning, explosion, personal injury or death.

Ducting work should be fabricated by the installing contractor in accordance with local codes. Industry manuals may be used as a guide when sizing and designing the duct system, such as NESCA (National Environmental Systems Contractors Association, 1501 Wilson Blvd., Arlington, Virginia 22209).

The unit should be placed as close as possible to the space to be air conditioned allowing clearance dimensions as indicated. Ducts should run as directly as possible to supply and return outlets. Use of nonflammable weatherproof flexible connectors on both supply and return connections at the unit to reduce noise transmission is recommended.

It is preferable to install the unit on the roof of the structure if the registers or diffusers are located in the wall or ceiling. A slab installation is recommended when the registers are low on the wall or in the floor.

Connecting the Return and Supply Flexible Duct in Manufactured or Modular Housing Application

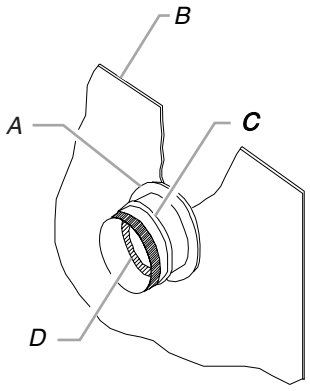
The return and supply fittings are to be attached at the unit to a suitable square-to-round duct converter. Your distributor has a factory-designed square-to-round converter transition. The model numbers of these kits are as follows: Small Chassis 25" SQRPCH101, Medium Chassis 27.5" SQRPCH102, Large and Extra Large Chassis 32.5" and 36" SQRPCH103. See Specification Sheets for dimension details. The SQRPCH101 has 14" (35.6 cm) duct collar on supply and 16" (40.6 cm) duct collar (equivalent diameter, opening is oval) on the return.

The SQRPCH102 and SQRPCH103 have 14" (35.6 cm) duct collar on supply and 18" (45.7 cm) duct collar (equivalent diameter, opening is oval) on the return. The collars are to be slipped into the openings, and the flanges bent around the converter. The square-to-round converter is attached to the flanges of the square duct openings.

The flexible duct is then clamped on to the collars. Once the duct is affixed to the unit, seal the collars and flanges with a proper waterproof sealant.

It is strongly encouraged to use appropriately-sized ducts based upon the CFM for your application (unit's CFM). If duct sizing through industry manuals or air duct calculators require larger ducts than converter openings, run larger duct size up to unit converter openings and reduce with a reducer duct fitting or transition right at the unit.

Square-to-Round Duct Converter Panel



A. Outer flange
B. Square to round duct converter panel
C. Bead
D. Starter flange

Plenum Application

A suitable plenum or square duct must be constructed. The duct cross-sectional area should be determined by industry duct sizing manuals or air duct calculators.

On ductwork exposed to outside air conditions of temperature and humidity, use an insulation with a good K factor, and a vapor barrier. Industry practices should be followed. Balancing dampers are recommended for each branch duct in the supply system. Ductwork should be properly supported from the unit.

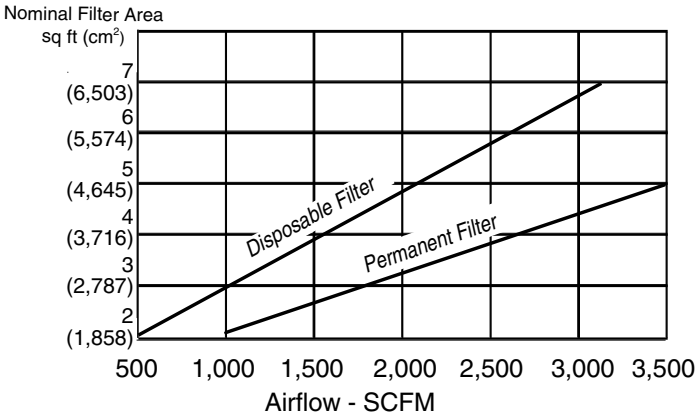
NOTE: Proper sealing of all duct work and air handling compartments is extremely important to overall unit efficiency.

Filters

Filters are not provided with unit, and must be supplied and installed in the return duct system by the installer. A field installed filter grille is recommended for easy and convenient access to the filters for periodic inspection and cleaning.

Filters must have adequate face area for the rated quantity of the unit. See the Air Delivery Table for the recommended filter size.

Air Delivery Table



Minimum Filter Size	
Nominal Size—in. (cm)	**Nominal Area—sq ft (cm²)**
10 x 20 (25.4 x 50.8)	1.4 (1,301)
14 x 20 (35.6 x 50.8)	1.9 (1,765)
14 x 25 (35.6 x 63.5)	2.4 (2,230)
15 x 20 (38.1 x 50.8)	2.1 (1,951)
16 x 20 (40.6 x 50.8)	2.2 (2,044)
16 x 25 (40.6 x 63.5)	2.8 (2,601)
20 x 20 (50.8 x 50.8)	2.8 (2,601)
20 x 25 (50.8 x 63.5)	3.5 (3,252)
25 x 25 (63.5 x 63.5)	4.3 (3,995)

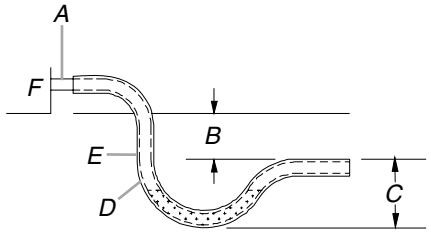
PIPING

Condensate Drain

The condensate drain connection of the evaporator is a half coupling of ¾" N.P.T. A trap must be installed for proper condensate drainage.

- Install the condesate drain trap as shown. Use a ¾" (1.9 cm) drain connection size or larger.
- Do not operate without a trap.
- Unit must be level or slightly inclined toward drain.

Condensate Drain



A. Drain connection
B. 2" (5.1 cm) minimum
C. 3" (7.6 cm) minimum
D. Positive liquid seal (required)
E. Flexible tubing—hose or pipe
F. Unit

Make Electrical Connections

Wiring

WARNING

To avoid the risk of fire or equipment damage, use copper conductors.

All wiring should be made in accordance with the National Electrical Code (N.E.C). The local power company should be consulted to determine the availability of sufficient power to operate the unit. The voltage, frequency and phase at the power supply should be checked to make sure it corresponds to the unit's Rated Voltage Requirement.

Install a branch circuit fused disconnect near the unit, in accordance with the N.E.C. or local codes. Wire sizes and over-current protection should be determined from the unit nameplate ampacity and in accordance with Branch Circuit Ampacity chart or the N.E.C. Under no circumstances should wiring be sized smaller than is recommended by either of these 2 sources.

Fuses smaller than that recommended on the wiring diagrams could result in unnecessary fuse failure or service calls. The use of protective devices of larger size than indicated could result in extensive damage to the equipment. The manufacturer bears no responsibility for damage caused to equipment as result of the use of larger than is recommended size protective devices.

All units have undergone a run test prior to packaging for shipment. This equipment has been started at minimum rated voltage and checked for satisfactory operation. Do not attempt to operate this unit if the voltage is not within the minimum and maximum voltages shown on nameplate.

All exterior wiring must be within approved weatherproof conduit. The unit must be permanently grounded in accordance with local codes, or in absence of local codes, with N.E.C. ANSI/ NFPA No. 70-1984 or latest edition by using ground lug in the control box.

Fuses or HACR-type circuit breakers may be used where codes permit.

NOTE: Some single-phase units are equipped with a single-pole contactor. Caution must be exercised when servicing as only 1 leg of the power supply is broken with the contactor.

To wire the unit, make the following high and low voltage connections:

⚠ WARNING

HIGH VOLTAGE!

Disconnect ALL power before servicing.

Multiple power sources may be present.

Failure to do so may cause property damage, personal injury or death.

High Voltage Wiring

Single Phase—2 leads should be connected to terminals L1 and L2 in the electrical control section, using wire sizes specified in the wiring table.

Low Voltage Wiring

- Air Conditioners—Connect 24V wires from the thermostat to the corresponding wires in the control box using 18 AWG as follows:

Lead	Thermostat
Red	R (24V)
Green	G (Fan)
Yellow	Y (Cool)
White	W1 (Heat)*
Brown	W2 (Heat)*

*Optional field installed heat connections

- Heat Pumps—Connect 24V wires from the thermostat to the corresponding wires in the control box using 18 AWG as follows:

Lead	Thermostat
Red	R (24V)
Green	G (Fan)
Orange	O (Rev. Valve)
White	W1 (Heat, 2nd)*
Brown	W2 (Heat, 3rd)*
Yellow	Y (Cool)
C (Blue)	C (Common

*Optional field installed heat connections

Internal Wiring

A diagram detailing the internal wiring of this unit is located on the electrical box cover. If any of the original wire supplied with the appliance must be replaced, the wire gauge and insulation must be the same as the original wiring.

Transformer is wired for 230 volts on the 208/230 models. See the wiring diagram for 208-volt wiring.

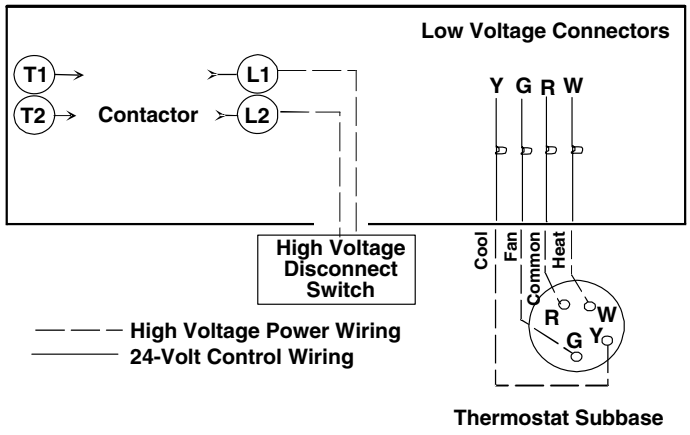
- For branch circuit wiring (main power supply to unit disconnect), the minimum wire size for the length of the run can be determined from the Branch Circuit Ampacity chart using the circuit ampacity found on the unit rating plate. From the unit disconnect to the unit, the smallest wire size allowable in the Branch Circuit Ampacity chart may be used for the ampacity, as the disconnect must be in sight of the unit.
- Wire size based on 60°C rated wire insulation and 86°F (30°C) ambient temperature.
- For more than 3 conductors in a raceway or cable, see the N.E.C. for derating the ampacity of each conductor.

Branch Circuit Ampacity

Supply Wire Length—ft (m)	15	20	25	30	35	40	45	50
200 (61)	6	4	4	4	3	3	2	2
150 (45.7)	8	6	6	4	4	4	3	3
100 (30.5)	10	8	8	6	6	6	4	4
50 (15.2)	14	12	10	10	8	8	6	6

Voltage Wiring

For Internal Wiring, See Wiring Label Attached To Unit



Thermostat Subbase

OPERATION

Start-up Procedure and Checklist—Cool

⚠ WARNING

HIGH VOLTAGE!

Disconnect ALL power before servicing.

Multiple power sources may be present.

Failure to do so may cause property damage, personal injury or death.

1. Disconnect power at all disconnects.
2. Turn the thermostat system switch to “COOL” and the fan switch to “AUTO.”
3. Turn the temperature setting to the highest setting.
4. Inspect all of the registers and set them to the normal open position.
5. Turn on the electrical supply at the disconnect.
6. Turn the fan switch to the “ON” position. The blower should operate after a 7-second delay.
7. Turn the fan switch to the “AUTO” position. The blower should stop after a 65-second delay.
8. Slowly lower the cooling temperature until the unit starts. The compressor, blower and fan should now be operating.
9. Allow the unit to run for 10 minutes. Make sure that cool air is being supplied by the unit.
10. Turn the temperature setting to the highest position, stopping the unit. The indoor blower will continue to run for 65 seconds.
11. Turn the thermostat system switch to “OFF” and disconnect all power when servicing the unit.

Start-up Procedure and Checklist—Heat Pump

⚠ WARNING

HIGH VOLTAGE!

Disconnect ALL power before servicing.

Multiple power sources may be present.

Failure to do so may cause property damage, personal injury or death.

1. Check that the cooling mode for the heat pump is working properly according to the procedure listed in the “Start-up Procedure and Checklist—Cooling Cycle” section.
   - The reversing valve is energized when the thermostat is placed in the cooling position.
   - A clicking sound should be noticeable from the reversing valve.
   - By lowering the temperature setting to call for cooling, the contactor is energized.
   - The compressor, blower and fan should then be running.
2. After the cooling mode is checked out, turn the thermostat system switch to “OFF.”
3. Turn the thermostat switch to “HEAT” and the fan switch to “AUTO.”
4. Slowly raise the heating temperature setting. When the heating 1st stage makes contact, stop raising the temperature setting. The compressor, blower and fan should now be running with the reversing valve in the de-energized (heating) position.
5. After giving the unit time to settle out, make sure that the unit is supplying heated air.
6. If the outdoor ambient is above 80°F (26.7°C), the unit may trip on its high pressure cutout when on heating. The compressor should stop.

IMPORTANT: The heating cycle must be thoroughly checked, so postpone the test to another day when conditions are more suitable. Do not fail to test the unit.

7. If the outdoor ambient is low and the unit operates properly on the heating cycle, you may check the pressure cutout operation by blocking off the indoor return air until the unit trips.
8. If the unit operates properly in the heating cycle, raise the temperature setting until the heating 2nd stage makes contact. Supplemental resistance heat, if installed, should now turn on. Make sure that the supplemental resistant heat operates properly.

   NOTE: If outdoor thermostats are installed, the outdoor ambient temperature must be below the set point of these thermostats for the heaters to operate. It may be necessary to jumper these thermostats to check heater operation if outdoor ambient temperature is mild.
9. For thermostats with an emergency heat switch, return to Step 4.

   NOTE: The emergency heat switch is located at the bottom of the thermostat. Move the switch to emergency heat. The heat pump will stop, the blower will continue to run, all heaters will come on and the thermostat emergency heat light will turn on. All 3-phase models are single-stage heat only.
10. If you are checking the unit in the wintertime when the outdoor coil is cold enough to activate the defrost control, observe at least one defrost cycle to make sure the unit defrosts completely.

Final System Checks

1. Check to see if all supply and return air grilles are adjusted and the air distribution system is balanced for the best compromise between heating and cooling.
2. Check for air leaks in the ductwork. See “Airflow Measurement and Adjustment” and “Checking Charge.”
3. Make sure that the unit is free of “rattles,” and the tubing in the unit is free from excessive vibration.
4. Make sure that the tubes and lines are not rubbing against each other or against the sheet metal surfaces or edges. If contact is found, correct the trouble.
5. Set the thermostat at the appropriate setting for cooling and heating or automatic changeover for normal use.
6. Check that the owner is instructed on the unit operation, filter, servicing, correct thermostat operation, etc.
7. The previous sections are recommended to serve as an indication that the unit will operate normally.

COMPONENTS

Contactor

This control is activated (closed) by the room thermostat for both heating and cooling. The contactor has a 24-volt coil and supplies power to the compressor and outdoor fan motor.

Crankcase Heater

This item is “ON” whenever power is supplied to the unit. It warms the compressor crankcase thereby preventing liquid migration and subsequent compressor damage. The insert type heater is self-regulating. It is connected electrically to the contactor L1 and L2 terminals.

Condenser Motor

This item is activated by the contactor during heating and cooling, except during defrost and emergency heat operation.

Compressor

This item is activated by the contactor for heating and cooling, except during emergency heat. It is protected by an internal overload.

Contactor Relay

This control is activated by the thermostat (24-volt coil) and supplies power to the contactor.

Defrost Control

The Defrost control provides time/temperature initiation and termination of the defrost cycle. When a defrost cycle is initiated, the defrost control shifts the reversing valve to Cooling mode, stops the outdoor fan and brings on supplemental heat. Normally, a defrost cycle will take only 2 to 3 minutes unless the system is low on charge or outdoor conditions are severe (windy and cold).

Outdoor Thermostat

These optional controls are used to prevent full electric heater operation at varying outdoor ambient (0°F to 45°F [-18°C to 7°C]). They are normally open above their set points and closed below to permit staging of the indoor supplement heater operation. If the outdoor ambient temperature is below 0° F (-18°C) with 50% or higher relative humidity (RH), an outdoor thermostat (OT) must be installed and set at (0°) on the dial. Failure to comply with this requirement may result in damage to the product which may not be covered by the manufacturer’s warranty.

Reversing Valve Coil

This coil is activated by the thermostat in the cooling mode and during defrost. It positions the reversing valve pilot valve for cooling operation.

Indoor Blower Motor

This is activated by setting the room thermostat to COOLING/HEATING or FAN ON position. The motor is energized through the EBTDR for PSC motors.

The X-13 motors are activated by setting the room thermostat to COOLING/HEATING or FAN ON position. The motor is energized by a 24-volt control signal (from thermostat Y, G or W). X-13 motors are constant torque motors with very low power consumption. See “Airflow Measurement and Adjustment” for speed adjustment instructions.

Blower Interlock Relay

This relay is used to energize the blower during the electric heat operation. Some room thermostats do not energize the motor during electric heat. This relay ensures blower operation when the room thermostat energizes heat. This relay has a 240-volt coil and an 8-amp contact relay. This relay is energized by the electric heat kit sequencer.

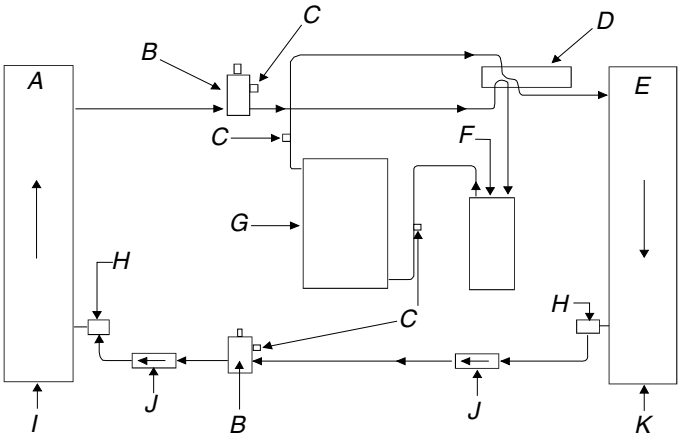
When the heat pump is in the cooling cycle, the heat pump operates exactly as an air conditioning unit.

The heat pump operates in the heating cycle by redirecting refrigerant flow through the refrigerant circuit external to the compressor. This is accomplished through the reversing valve. Hot discharge vapor from the compressor is directed to the indoor coil (evaporator on the cooling cycle) where the heat is removed, and the vapor condenses to a liquid. It then goes through the expansion device to the outdoor coil (condenser on the cooling cycle) where the liquid is evaporated, and the vapor goes to the compressor.

When the solenoid valve coil is operated either from heating to cooling or cooling to heating, the piston in the reversing valve moves to the low pressure (high pressure) reverse position.

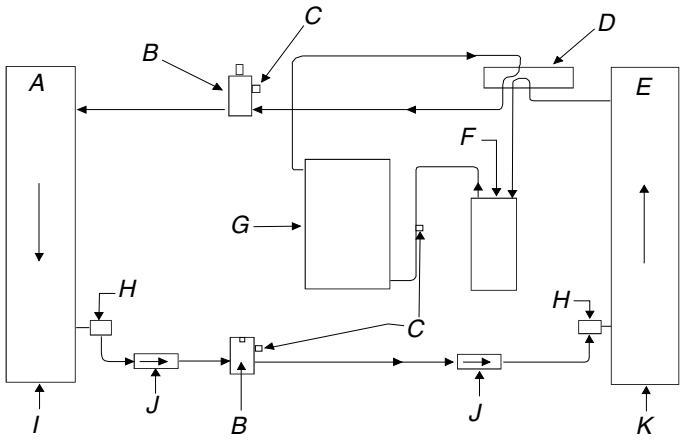
The following illustrations show schematics of a heat pump on the cooling cycle and the heating cycle. In addition to a reversing valve, a heat pump is equipped with an expansion device and check valve for the indoor coil, and similar equipment for the outdoor coil. It is also provided with a defrost control system.

Cooling Cycle



A. Evaporator
B. Service valves
C. Service ports
D. Reversing valve
E. Condenser
F. Accumulator
G. Compressor
H. Distributors
I. Expansion device
J. Indoor coil
K. Check-valve orifices
L. Outdoor coil

Heating Cycle



A. Condenser
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K. Outdoor coil

The expansion devices are flowrator distributors and perform the same function on the heating cycle as on the cooling cycle.

The flowrator distributors also act as check valves to allow for the reverse of refrigerant flow.

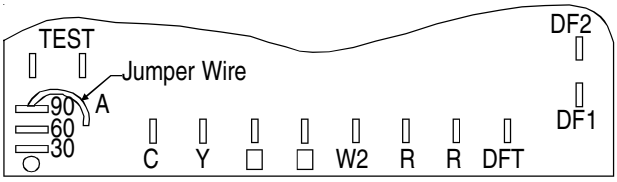
When the heat pump is on the heating cycle, the outdoor coil is functioning as an evaporator. The temperature of the refrigerant in the outdoor coil must be below the temperature of the outdoor air in order to extract heat from the air. Thus, the greater the difference in the outdoor temperature and the outdoor coil temperature, the greater the heating capacity of the heat pump. This phenomenon is a characteristic of a heat pump. It is a good practice to provide supplementary heat for all heat pump installations in areas where the temperature drops below 45°F (7°C). It is also a good practice to provide sufficient supplementary heat to handle the entire heating requirement should there be a component failure of the heat pump, such as a compressor, refrigerant leak, etc.

Since the temperature of the refrigerant in the outdoor coil on the heating cycle is generally below the freezing point, frost forms on the surfaces of the outdoor coil under certain weather conditions. Therefore, it is necessary to reverse the flow of the refrigerant to provide hot gas in the outdoor coil to melt the frost accumulation. This is accomplished by reversing the heat pump to the cooling cycle. At the same time, the outdoor fan stops to hasten the temperature rise of the outdoor coil and lessen the time required for defrosting. The indoor blower continues to run, and the supplementary heaters are energized.

DEFROST CONTROL

During operation, the power to the circuit board is controlled by a temperature sensor, which is clamped to a feeder tube entering the outdoor coil. Defrost timing periods of 30, 60 and 90 minutes may be selected by connecting the circuit board jumper to 30, 60 and 90 respectively. Accumulation of time for the timing period selected starts when the sensor closes (approximately 34°F [5°C]), and when the wall thermostat calls for heat. At the end of the timing period, the unit's defrost cycle will be initiated provided the sensor remains closed. When the sensor opens (approximately 60°F [16°C]), the defrost cycle is terminated and the timing period is reset. If the defrost cycle is not terminated due to the sensor temperature, a 10-minute override interrupts the unit's defrost period.

Circuit Board



Suggested Field Testing/Troubleshooting

1. Run the unit in the heating mode (room thermostat calling for heat).
2. Check the unit for proper charge.

   NOTE: Bands of frost on the condenser coil indicate low refrigerant charge.
3. Turn off power to the unit.
4. Disconnect the outdoor fan by removing the purple lead from "DF2" on the defrost control.
5. Restart the unit and allow frost to accumulate.
6. After a few minutes of operation, the defrost thermostat should close. To verify this, check for 24 volts between "DFT" and "C" on the control board. If the temperature at the thermostat is less than 28°F (-2°C) and the thermostat is open, replace the defrost thermostat, since it is defective.
7. When the unit's defrost thermostat has closed, short the test pins on the circuit board until the reversing valve shifts, indicating defrost. This should take up to 21 seconds depending on what timing period the control is set.

NOTE: After defrost initiation, the short must instantly be removed, or the unit's defrost period will last only 2.3 seconds.

8. After the unit's defrost thermostat has terminated, check the defrost thermostat for 24 volts between "DFT" and "C." The reading should indicate 0 volts (open sensor).
9. Turn off power to the unit.
10. Replace the outdoor fan motor lead to terminal "DF2" on the circuit board and turn on power.

AIRFLOW MEASUREMENT AND ADJUSTMENT

After reviewing the "Ducting" section, proceed with the airflow measurements and adjustments. The unit blower curves (see Specification Sheets) are based on the external static pressure (ESP per in./W.C.). The duct openings on the unit are considered internal static pressure. As long as ESP is maintained, the unit will deliver the proper air up to the maximum static pressure listed for the CFM required by the application (for example, home, building, etc.).

In general, 400 CFM per ton of cooling capacity is a rule of thumb. Some applications depending on the sensible and latent capacity requirements may need only 350 CFM or up to 425 CFM per ton. Check condition space load requirements (from load calculations) and equipment expanded ratings data to match CFM and capacity.

After the unit is set and the ductwork completed, verify the ESP with a 1" (2.5 cm) inclined manometer with pitot tubes or a Magnahelic gauge and confirm CFM to blower curves in the Specification Sheets. All units have 3-speed blower motors. If the low speed is not utilized, the speed tap can be changed to medium or high speed.

NOTE: Never run CFM below 350 CFM per ton. Evaporator freezing or poor unit performance is possible.

Speed Tap Adjustments for Indoor Blower Motor—PSC Motor

Adjust the CFM by changing the speed tap of the indoor blower motor at the EBTDR "COM" connection with one of the speed taps on "M1" or "M2" (Black—High Speed, Blue—Medium Speed, Red—Low Speed).

Speed Tap Adjustments for Indoor Blower Motor—X-13 Motor

The blower motor speed for the X-13 motor is controlled by 3 - 24-volt low-voltage leads: green, yellow and white. The green lead sets the speed for fan-only mode. The yellow lead sets the speed for cooling and heat pump heating mode (if applicable). The white lead sets the speed for electric heat mode (emergency heat and 2nd stage heat, if applicable).

The leads are factory connected as follows: Green to T1, yellow to T2 and white to T3. T1 is the low speed setting and is dedicated to fan-only mode. T2 is medium speed cooling, and T3 is medium speed heating. T4 is high speed cooling, and T5 is high speed heating. To adjust the blower speed, move the yellow and/or white wires to T4 and T5.

NOTE: If more than 1 lead is energized at the same time, the motor will use the higher speed setting.

See CFM vs. ESP tables in this manual.

BLOWER PERFORMANCE DATA

			E.S.P. (In. of H_2O)							
Model	**Speed**	**Volts—230**	**0.1**	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**
WPC4324AH WPH4324AH	Low	CFM	680	640	590	555	505	440	340	-
		Watts	155	150	145	140	130	120	110	-
	Med	CFM	895	855	815	755	700	630	545	390
		Watts	230	220	215	205	195	180	170	145
	High	CFM	1,185	1,130	1,070	1,010	930	850	760	650
		Watts	350	340	325	310	295	280	265	245
WPC4330AH WPH4330AH	Low	CFM	1,150	1,080	1,025	975	925	845	-	-
		Watts	340	330	315	305	295	280	-	-
	Med	CFM	1,335	1,275	1,205	1,135	1,075	985	910	845
		Watts	425	415	400	385	370	350	330	310
	High	CFM	1,435	1,355	1,290	1,210	1,130	1,040	960	885
		Watts	485	465	455	435	415	400	385	370
WPC4336AH WPH4336AH	Low	CFM	1,180	1,125	1,075	1,020	955	875	655	-
		Watts	335	325	315	305	295	275	240	-
	Med	CFM	1,350	1,280	1,205	1,130	1,050	985	910	845
		Watts	435	420	405	385	375	350	330	310
	High	CFM	1,450	1,370	1,290	1,205	1,130	1,040	960	885
		Watts	495	480	465	440	425	400	385	370
WPC4342AH WPH4342AH	Low	CFM	1,425	1,410	1,355	1,310	1,245	1,170	1,080	-
		Watts	450	445	430	420	405	390	370	-
	Med	CFM	1,620	1,595	1,545	1,485	1,425	1,345	1,250	1,160
		Watts	550	540	525	510	495	475	450	425
	High	CFM	1,945	1,935	1,875	1,800	1,730	1,635	1,535	1,440
		Watts	765	755	735	715	695	670	640	615
WPC4348AH WPH4348AH	Low	CFM	1,425	1,410	1,355	1,310	1,245	1,170	1,080	-
		Watts	450	445	430	420	405	390	370	-
	Med	CFM	1,720	1,660	1,585	1,520	1,460	1,365	1,270	-
		Watts	560	555	540	530	520	490	470	-
	High	CFM	2,110	2,060	1,980	1,895	1,795	1,705	1,590	1,500
		Watts	785	780	765	745	720	705	665	625

Model	Speed	Volts—230	E.S.P. (In. of H_2O) 0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
WPC4360AH WPH4360AH	T1	CFM	1,775	1,635	1,645	1,515	1,510	1,450	1,430	1,400
		Watts	395	420	435	445	455	465	470	475
	T2/T3	CFM	1,845	1,790	1,715	1,685	1,590	1,580	1,530	1,500
		Watts	490	505	520	535	550	560	570	575
	T4/T5	CFM	2,025	1,900	1,840	1,780	1,725	1,650	1,620	1,580
		Watts	575	595	620	630	645	655	660	670
WPC4424AH WPH4424AH	T1	CFM	934	759	755	638	581	489	-	-
		Watts	95	77	76	73	83	90	-	-
	T2/T3	CFM	990	837	801	744	696	652	601	-
		Watts	107	94	105	110	119	133	142	-
	T4/T5	CFM	1,061	989	947	925	876	-	-	-
		Watts	126	134	146	158	169	-	-	-
WPC4430AH WPH4430AH	T1	CFM	1,022	929	894	829	797	748	695	643
		Watts	116	114	126	134	144	156	168	173
	T2/T3	CFM	1,103	1,063	1,012	962	937	-	-	-
		Watts	142	154	165	173	185	-	-	-
	T4/T5	CFM	1,285	1,240	1,202	1,163	1,124	1,076	1,046	1,003
		Watts	205	218	231	244	257	268	280	288
WPC4436AH WPH4436AH	T1	CFM	1,234	1,111	1,071	1,024	933	922	-	-
		Watts	144	140	152	164	179	183	-	-
	T2/T3	CFM	1,287	1,232	1,186	1,133	1,099	1,053	-	-
		Watts	162	175	187	201	213	221	-	-
	T4/T5	CFM	1,381	1,325	1,277	1,233	1,181	1,144	-	-
		Watts	195	203	217	233	247	258	-	-
WPC4442AH WPH4442AH	T1	CFM	1,272	1,197	1,145	1,106	1,055	998	947	906
		Watts	160	168	183	191	211	220	230	243
	T2/T3	CFM	1,357	1,297	1,244	1,194	1,147	1,099	1,049	1,008
		Watts	188	202	213	228	245	255	267	284
	T4/T5	CFM	1,537	1,478	1,431	1,386	1,336	1,293	1,253	1,208
		Watts	244	258	274	288	303	317	329	341

Model	Speed	Volts—230	E.S.P. (In. of H_2O) 0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
WPC4448AH WPH4448AH	T1	CFM	1,418	1,383	1,349	1,312	1,275	1,228	1,178	1,141
		Watts	242	258	273	282	299	308	320	338
	T2/T3	CFM	1,175	1,635	1,645	1,515	1,510	1,450	1,430	1,400
		Watts	395	420	435	445	455	465	470	475
	T4/T5	CFM	1,845	1,790	1,715	1,685	1,590	1,580	1,530	1,500
		Watts	490	505	520	535	550	560	570	575
WPC4460AH WPH4460AH	T1/T2/T3	CFM	1,775	1,635	1,645	1,515	1,510	1,450	1,430	1,400
		Watts	395	420	435	445	455	465	470	475
	T4/T5	CFM	2,025	1,900	1,840	1,780	1,725	1,650	1,620	1,580
		Watts	575	595	620	630	645	655	660	670

NOTES:

- Data shown is dry coil. Wet coil pressure drop is approximate.
- 0.1" H_2O for 2-row indoor coil; 0.2" H_2O for 3-row indoor coil; 0.3" H_2O for 4-row indoor coil.
- Data shown does not include filter pressure drop, approximately 0.08" H_2O.
- Reduce airflow by 2% for 208V operation.

ELECTRIC HEAT INSTALLATION AND ADJUSTMENT

This series of electric cooling and heat pump package equipment is designed to accept a field installed electric heat kit. The unit is equipped to easily install the HKR Series Electric Heat Kit. Full installation instructions are included in this kit. Please use this document for guidance in field equipping the package unit with electric heat.

Choose the heat kit that fits the application for the specific installation. Permanently mark the unit's nameplate with the model being installed. High and low voltage connections are detailed in the heat kit instructions.

Indoor Blower motor speed tap selection may need to be modified to accommodate normal continuous operation to prevent a nuisance trip. See the following charts.

WPC/WPH43(24-60) Models

Unit Model Number	Electric Heat KW 5	8	10	15	20
WPC/WPH4324H41**	$M_{(F)}$	$M_{(F)}$	$M_{(F)}$	H	NA
WPC/WPH4330H41**	$L_{(F)}$	$L_{(F)}$	$L_{(F)}$	M	NA
WPC/WPH4336H41**	$M_{(F)}$	$M_{(F)}$	$M_{(F)}$	H	NA
WPC/WPH4342H41**	$L_{(F)}$	$L_{(F)}$	M	M	H
WPC/WPH4348H41**	$M_{(F)}$	$M_{(F)}$	$M_{(F)}$	$M_{(F)}$	H
WPC/WPH4360H41**	$2_{(F)}$	$2_{(F)}$	$2_{(F)}$	$2_{(F)}$	$2_{(F)}$

H/3—High; M/2—Medium; L/1—Low

Speed taps description: H/M/L—PSC: 3/2/1—X-13

WPC/WPH44(24-60) Models

Unit Model Number	Electric Heat KW 5	8	10	15	20
WPC/WPH4424H41**	T3	T3	T3	T5	NA
WPC/WPH4430H41**	T3	T3	T3	T5	NA
WPC/WPH4436H41**	T3	T3	T3	T5	NA
WPC/WPH4442H41**	T3	T3	T3	T3	T5
WPC/WPH4448H41**	T3	T3	T3	T3	T3
WPC/WPH4460H41**	T3	T3	T3	T3	T3

T1—Fan Only: T2—Normal Speed Cooling; T3—Normal Speed heating; T4—High Speed Cooling; T5—High Speed Heating

SYSTEM MAINTENANCE

⚠ WARNING

HIGH VOLTAGE!

Disconnect ALL power before servicing.

Multiple power sources may be present.

Failure to do so may cause property damage, personal injury or death.

The self-contained package air conditioner and heat pump should operate for many years without excessive service calls if the unit is installed properly. However, it is recommended that the homeowner inspect the unit before a seasonal start-up. The coils should be free of debris, so adequate airflow is achieved. The return and supply registers should be free of any obstructions. The filters should be cleaned or replaced.

These few steps will help to keep the product up time to a maximum. The Troubleshooting Chart should help in identifying problems if the unit does not operate properly.

Service

NOTE: The following information is for use by qualified service agency only. Others should not attempt to service this equipment.

Common Causes of Unsatisfactory Operation of Heat Pump on the Heating Cycle.

- Inadequate Air Volume Through Indoor Coil

  When a heat pump is in the heating cycle, the indoor coil is functioning as a condenser. The return air filter must always be clean, and sufficient air volume must pass through the indoor coil to prevent excessive discharge pressure, and high pressure cutout.

- Outside Air Into Return Duct

  Do not introduce cold outside air into the return duct of a heat pump installation. Do not allow air entering the indoor coil to drop below 65°F (18°C). Air below this temperature will cause low discharge pressure, thus low suction pressure, and excessive defrost cycling resulting in low heating output. It may also cause false defrosting.

- Undercharge

  An undercharged heat pump on the heating cycle will cause low discharge pressure resulting in low suction pressure and frost accumulation on the outdoor coil.

- Poor "Terminating" Sensor Contact

  The defrost terminating sensor must make good thermal contact with the outdoor coil tubing. Poor contact may not terminate the defrost cycle quickly enough to prevent the unit from cutting out on high discharge pressure.

- Malfunctioning Reversing Valve

  This may be due to:

  1. Solenoid not energized—In order to determine if the solenoid is energized, touch the nut that holds the solenoid cover in place with a screwdriver. If the nut magnetically holds the screwdriver, the solenoid is energized and the unit is in the cooling cycle.
  2. No voltage at the solenoid—Check unit voltage. If no voltage, check wiring circuit.
  3. Valve will not shift—If the unit is undercharged, check for leaks. If valve body damaged, replace valve. If unit is properly charged, and it is on the heating cycle, raise the discharge pressure by restricting airflow through the indoor coil. If the valve does not shift, tap it lightly on both ends with a screwdriver handle.

     NOTE: Do not tap the valve body.

     If the unit is on the cooling cycle, raise the discharge pressure by restricting airflow through the outdoor coil. If the valve does not shift after the above attempts, turn off the unit and wait until the discharge and suction pressure equalize, and repeat above steps. If the valve does not shift, replace it.

TROUBLESHOOTING CHART

⚠ WARNING

HIGH VOLTAGE!

Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.

Symptom	Possible Cause	Remedy
High head—low suction	■ Restriction in liquid line or flowrator	■ Remove or replace with proper size flowrator.
High head—high or normal suction	■ Dirty condenser coil ■ Overcharged ■ Condenser fan not running	■ Clean coil. ■ Correct system charge. ■ Repair or replace condenser fan.

Symptom	Possible Cause	Remedy
Low head—high suction	■ Incorrect flowrator ■ Defective compressor valves ■ Flowrator not seating properly	■ Replace with correct flowrator. ■ Replace compressor. ■ Check for debris under flowrator or deformed flowrator. Remove debris or replace flowrator.
Unit will not run.	■ Power off or loose electrical connection ■ Thermostat out of calibration; set too high ■ Defective contactor ■ Blown fuses or tripped circuit breaker ■ Transformer defective ■ High or low pressure control (optional) open ■ Compressor overload contacts open	■ Check for unit voltage at contactor in unit. ■ Reset thermostat. ■ Check for 24 volts at contactor coil. Replace if contacts are open. ■ Replace fuse or reset circuit breaker. Check wiring. Replace transformer. ■ Reset high pressure control or check unit charge. High pressure control opens at 610 psig, and low pressure control opens at 22 psig. ■ Replace compressor. **NOTE:** Wait at least 2 hours for overload to reset.
Condenser fan runs; compressor does not run.	■ Loose connection ■ Compressor stuck ■ Grounded or open winding ■ Open internal overload ■ Low voltage connection ■ Capacitor weak, open or shorted	■ Check for unit voltage at compressor. ■ Check and tighten all connections. ■ Wait at least 2 hours for overload to reset. If still open, replace the compressor. ■ At compressor terminals, voltage must be within 10% of nameplate volts when unit is operating. ■ Check capacitor. Replace if defective.
Low suction—cool compressor, iced evaporator coil	■ Low indoor airflow	■ Increase speed of blower or reduce restriction. ■ Replace air filters.
Compressor short cycles	■ Defective overload protector ■ Unit cycling on low pressure control ■ High pressure switch cuts out	■ Replace overload protector. Check for correct voltage. ■ Check refrigerant charge and/or airflow. ■ Check airflow (indoor and outdoor).
Registers sweat	■ Low airflow	■ Increase speed of blower or reduce restriction. ■ Replace air filters.
High suction pressure	■ Excessive load ■ Defective compressor ■ Reversing valve not seating properly.	■ Recheck load calculation ■ Replace compressor. ■ Replace reversing valve.
Insufficient cooling	■ Improperly sized unit ■ Improper airflow ■ Incorrect refrigerant charge. ■ Incorrect voltage	■ Recalculate load. ■ Check airflow—should be approximately 400 CFM per ton. ■ Charge per procedure attached to unit service panel. ■ At compressor terminals, voltage must be within 10% of nameplate volts when unit is operating.
Evaporator coil freezing or frosting	■ Low airflow ■ Low refrigerant charge ■ Operating unit in cooling mode below 65ºF (18ºC) outdoor temperature	■ Check airflow—should be approximately 400 CFM per ton. ■ Check for dirty air filters and that all duct outlets are open. ■ Properly charge unit. ■ Install or check low ambient control—should be open below 65ºF (18ºC) outdoor temperature.

WIRING DIAGRAM—WPC43(24-48)AH

⚠ WARNING

HIGH VOLTAGE!

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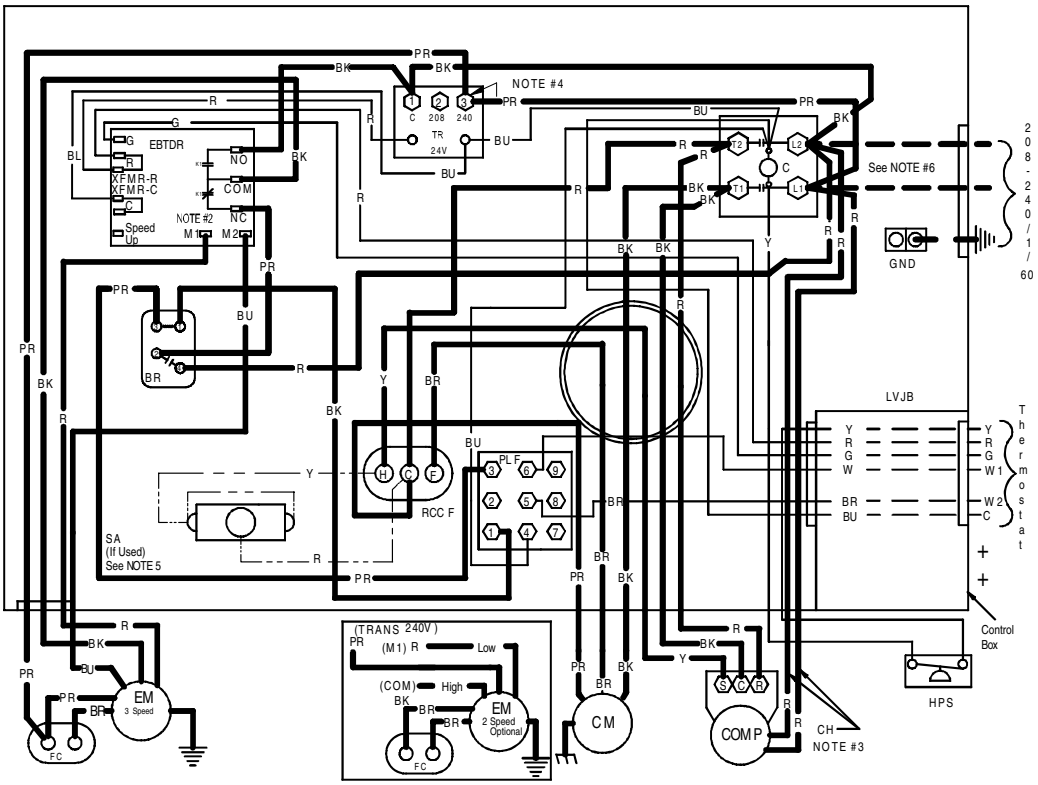
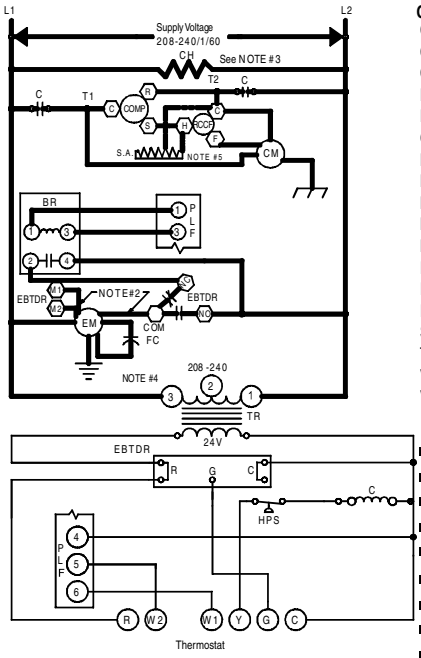




Component Legend

C	Contactor
CM	Condenser Motor
COMP	Compressor
DC	Defrost Control
DFT	Defrost Thermostat
GND	Equipment Ground
HPS	High Pressure Switch
HVDR	High Voltage Defrost Relay
LPS	Low Pressure Switch
LVDR	Low Voltage Defrost Relay
LVJB	Low Voltage Junction Box
PLF	Female Plug Connector
RVC	Reversing Valve Coil
RCCF	Run Capacitor for Compressor and Fan
SA	Start Assist
TR	Transformer
VSM	Variable Speed Motor
VSTB	Variable Speed Terminal Block

Factory Wiring

- Line Voltage
- Low Voltage
- Optional High Voltage

Field Wiring

- High Voltage
- Low Voltage

Symbol	Color
BK	Black
BU	Blue
BR	Brown
G	Green
OR	Orange
PR	Purple
R	Red
W	White
Y	Yellow

NOTES:

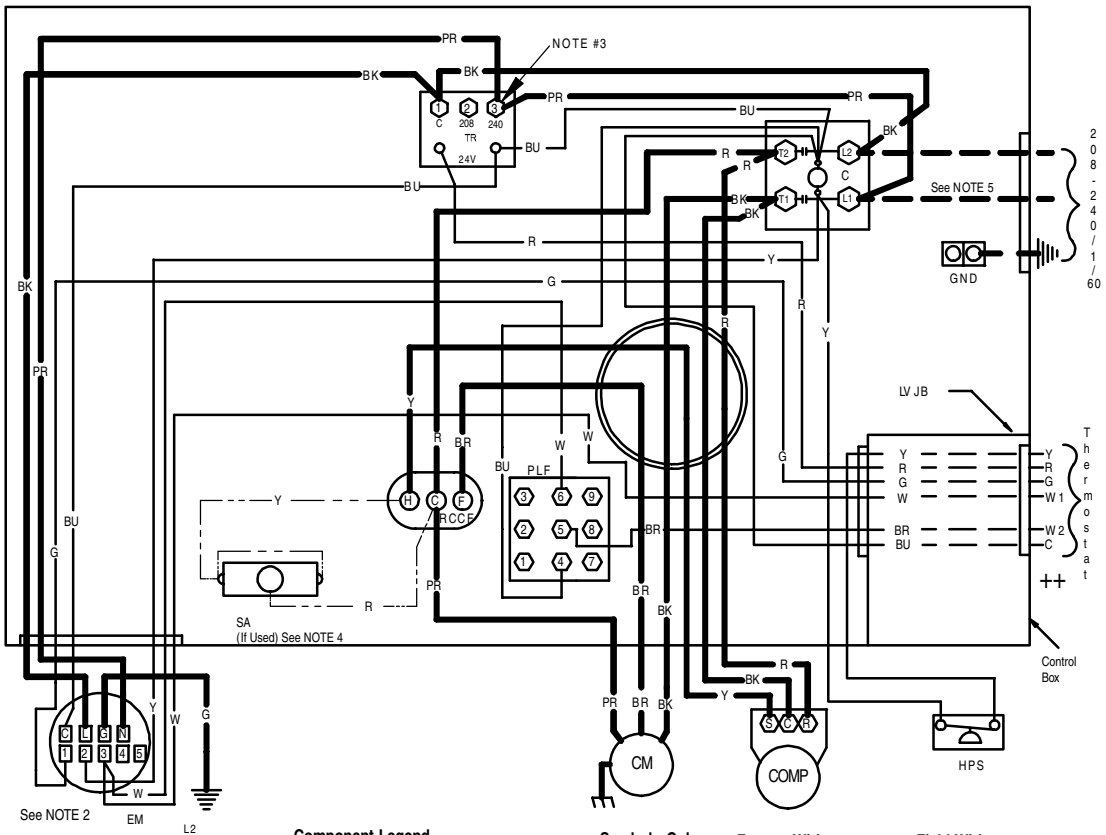
- Replacement wire must be the same size and type insulation as the original (at least 105ºC). Use copper conductor only.
- To change evaporator motor speed, replace the lead on EBTDR "COM" with lead on EBTDR "M1 or "M2."
- Crankcase heat not supplied on all units.
- For 208-volt transformer operation, move the purple wires from Terminal 3 to Terminal 2 on transformer.
- Start Assist factory-equipped, when required.
- Use copper conductors only.
- ++ Use N.E.C. Class 2 wire.
- See unit rating plate for the type and sixe of overcurrent protection.
- Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.

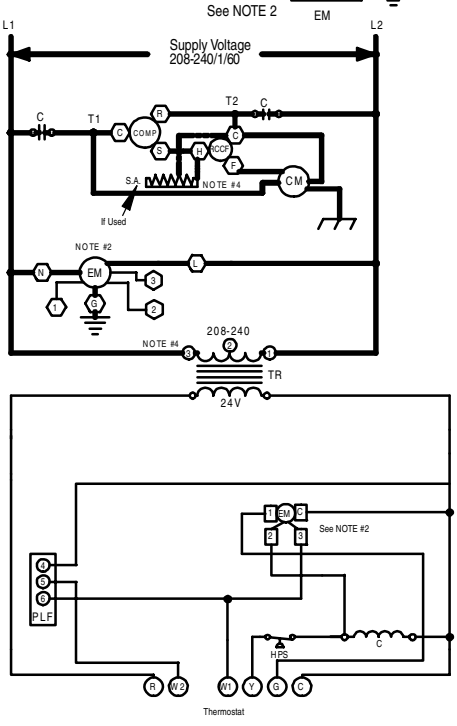
WIRING DIAGRAM—WPC4360AH, WPC44(24-60)AH

⚠ WARNING

HIGH VOLTAGE!

Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.





Component Legend

C	Contactor
CM	Condenser Motor
COMP	Compressor
DC	Defrost Control
DFT	Defrost Thermostat
GND	Equipment Ground
HPS	High Pressure Switch
HVDR	High Voltage Defrost Relay
LPS	Low Pressure Switch
LVDR	Low Voltage Defrost Relay
LVJB	Low Voltage Junction Box
PLF	Female Plug Connector
RVC	Reversing Valve Coil
RCCF	Run Capacitor for Compressor and Fan
SA	Start Assist
TR	Transformer
VSM	Variable Speed Motor
VSTB	Variable Speed Terminal Block

Symbol	Color
BK	Black
BU	Blue
BR	Brown
G	Green
OR	Orange
PR	Purple
R	Red
W	White
Y	Yellow

Factory Wiring
- Line Voltage
- Low Voltage
- Optional High Voltage

Field Wiring
- High Voltage
- Low Voltage

NOTES:

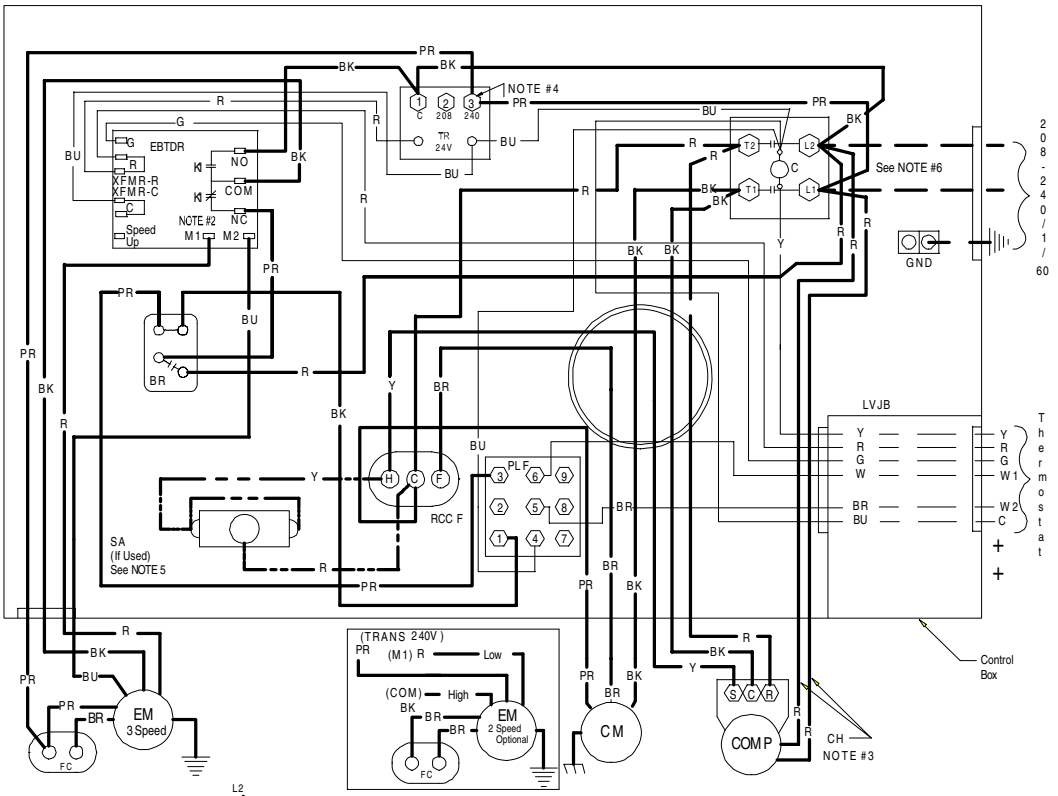
- Replacement wire must be the same size and type insulation as the original (at least 105°C). Use copper conductor only.
- To change evaporator motor speed, move the white and yellow leads on from "EM2" and "EM3" to "EM4" and "EM5." If both leads are energized, the higher speed setting is used.
- For 208-volt transformer operation, move the purple wires from Terminal 3 to Terminal 2 on transformer.
- Start Assist factory-equipped, when required.
- Use copper conductors only.
- ++ Use N.E.C. Class 2 wire.
- See unit rating plate for the type and sixe of overcurrent protection.
- Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.

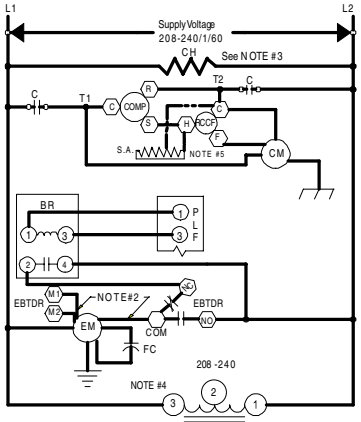
WIRING DIAGRAM—WPC43(24-48)AH

⚠ WARNING

HIGH VOLTAGE!

Disconnect ALL power before servicing.
Multiple power sources may be present.
Failure to do so may cause property damage, personal injury or death.





Factory Wiring
- Line Voltage
- Low Voltage
- Optional High Voltage

Field Wiring
- High Voltage
- Low Voltage

Symbol	Color
BK	Black
BU	Blue
BR	Brown
G	Green
OR	Orange
PR	Purple
R	Red
W	White
Y	Yellow

Component Legend

C	Contactor
CM	Condenser Motor
COMP	Compressor
DC	Defrost Control
DFT	Defrost Thermostat
GND	Equipment Ground
HVDR	High Voltage Defrost Relay
LPS	Low Pressure Switch
LVDR	Low Voltage Defrost Relay
LVJB	Low Voltage Junction Box
PLF	Female Plug Connector
RVC	Reversing Valve Coil
RCCF	Run Capacitor for Compressor and Fan
SA	Start Assist
TR	Transformer
VSM	Variable Speed Motor
VSTB	Variable Speed Terminal Block

NOTES:

- Replacement wire must be the same size and type insulation as the original (at least 105ºC). Use copper conductor only.
- To change evaporator motor speed, replace the lead on EBTDR "COM" with lead on EBTDR "M1 or "M2."
- Crankcase heat not supplied on all units.
- For 208-volt transformer operation, move the purple wires from Terminal 3 to Terminal 2 on transformer.
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WIRING DIAGRAM—WPC4360AH, WPC44(24-48)AH

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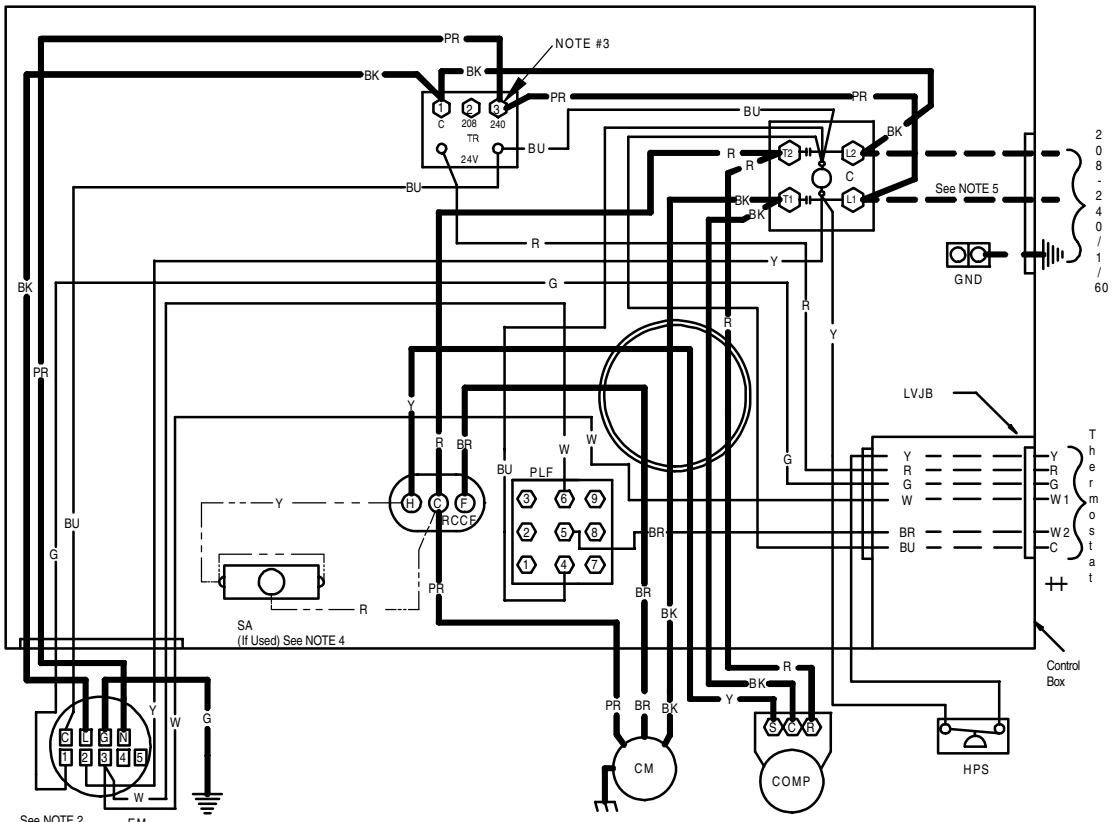

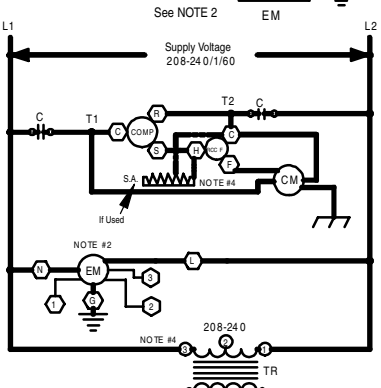

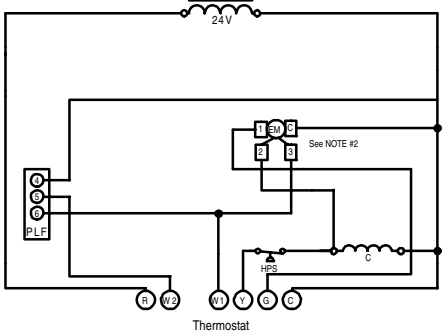

Component Legend

C	Contactor
CM	Condenser Motor
COMP	Compressor
DC	Defrost Control
DFT	Defrost Thermostat
GND	Equipment Ground
HPS	High Pressure Switch
HVDR	High Voltage Defrost Relay
LPS	Low Pressure Switch
LVDR	Low Voltage Defrost Relay
LVJB	Low Voltage Junction Box
PLF	Female Plug Connector
RVC	Reversing Valve Coil
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VSM	Variable Speed Motor
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OR	Orange
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Y	Yellow

Factory Wiring
- Line Voltage
- Low Voltage
- Optional High Voltage

Field Wiring
- High Voltage
- Low Voltage

NOTES:

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- Use copper conductors only.
- ++ Use N.E.C. Class 2 wire.
- See unit rating plate for the type and sixe of overcurrent protection.
- Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.

WIRING DIAGRAM—WPH43(24-48)AH

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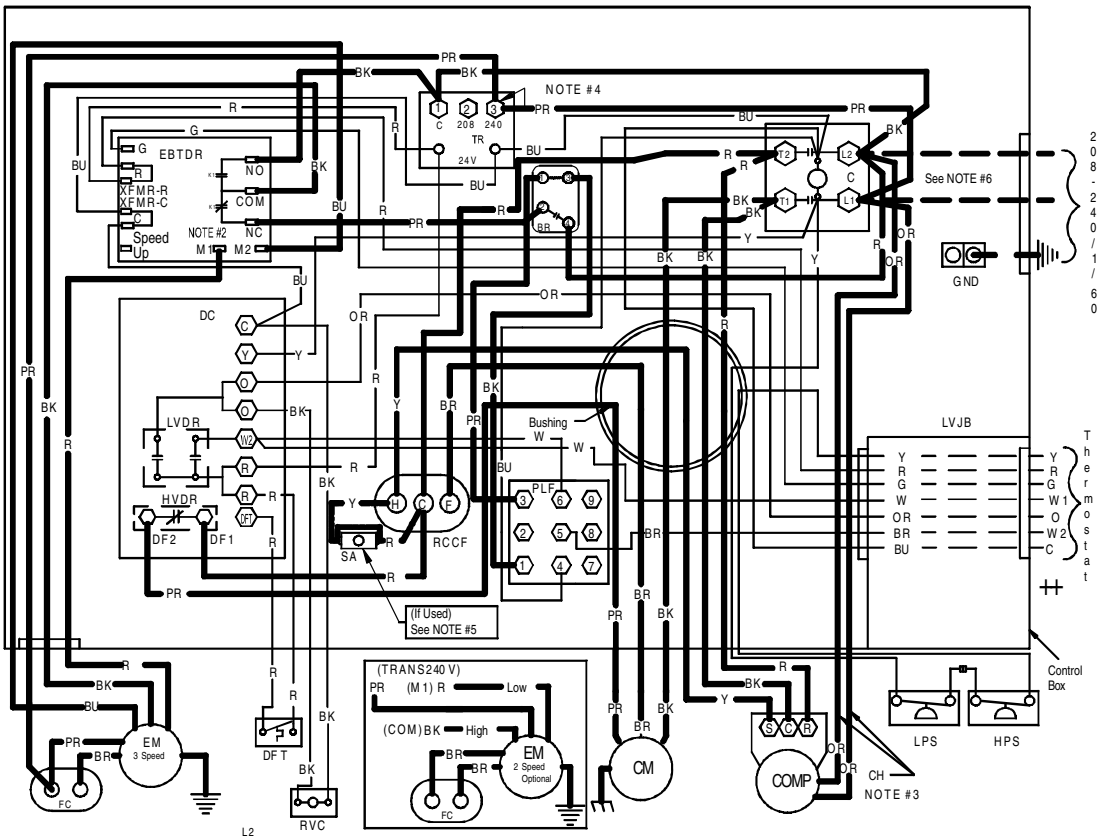

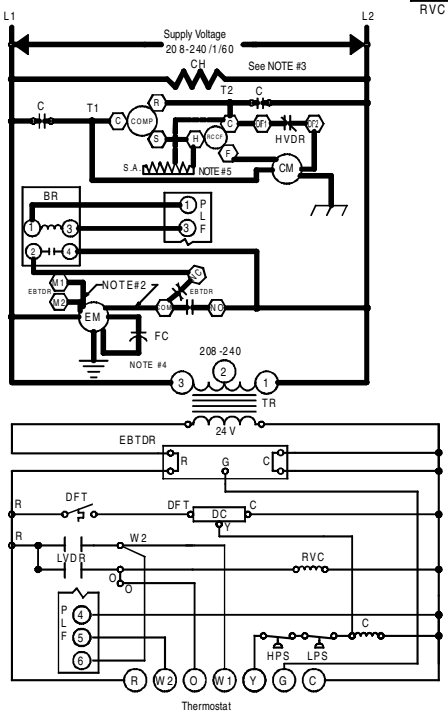

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WIRING DIAGRAM—WPH4360AH, WPH44(24-60)AH

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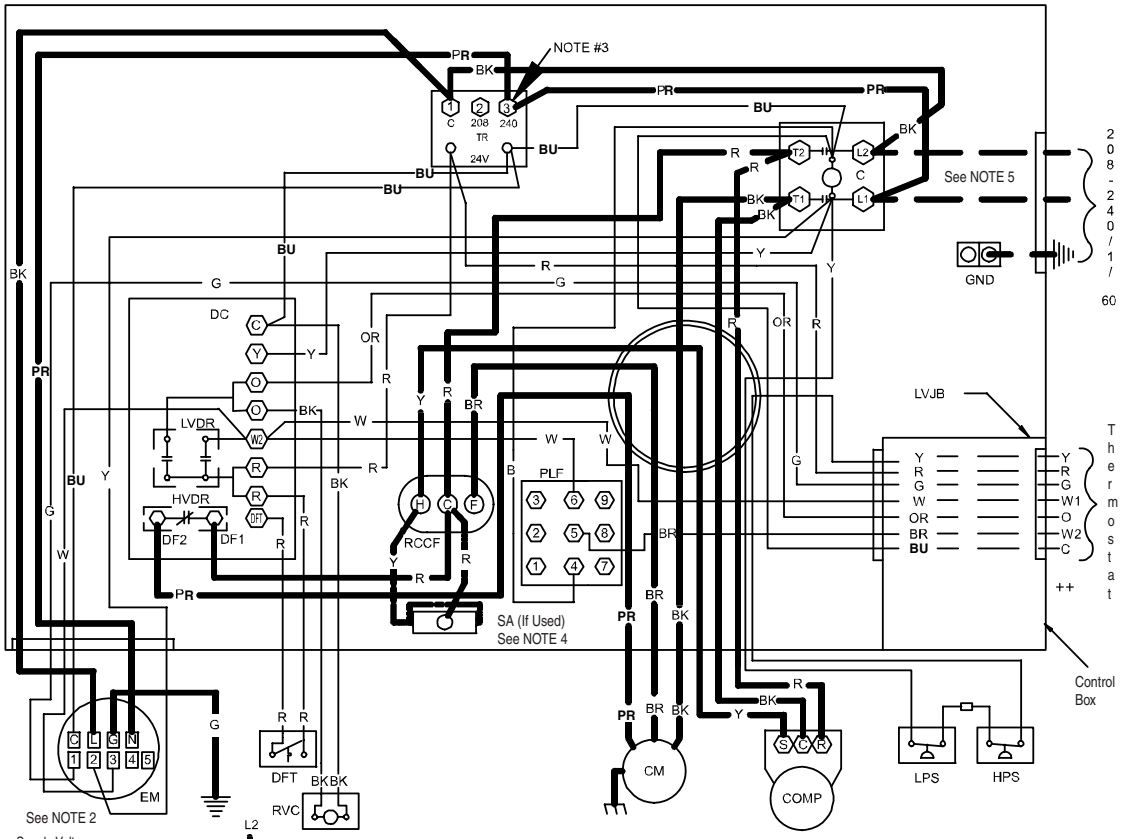

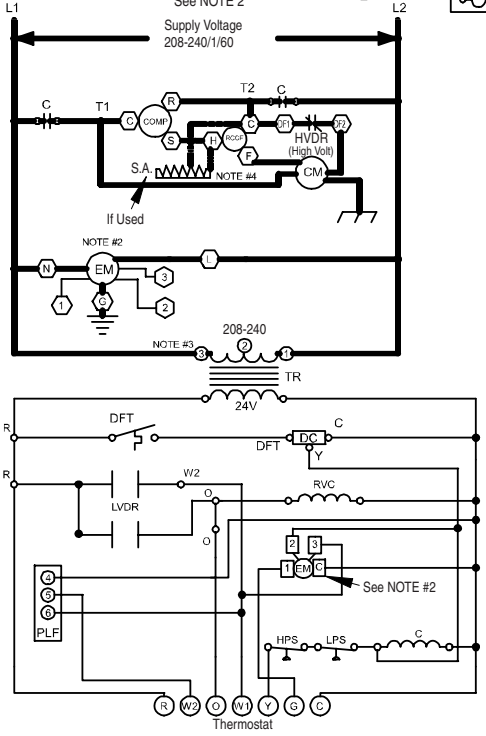

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ASSISTANCE OR SERVICE

If you need further assistance, you can write to the below address with any questions or concerns:

Tradewinds Distributing Company, LLC
14610 Breakers Drive
Jacksonville, FL 32258

Please include a daytime phone number in your correspondence.

Or call toll free: 1-866-944-7575.

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